

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) ~~GENE EXPRESSION CASSETTE~~, A gene expression cassette characterized by the fact that ~~comprises~~ comprising one or more genes encoding ~~enzyme~~ one or more enzymes selected from the group that contains: myo-inositol 1-phosphate synthase (EC: 5.5.1.4), myo-inositol monophosphatase (EC: 3.1.3.25), myo-inositol oxygenase (EC: 1.13.99.1), β -glucuronidase (EC: 3.2.1.31), glucuronokinase (EC: 2.7.1.43), glucuronosyltransferase (EC: 2.4.1.17), glucuronate 1-phosphate uridylyltransferase (EC: 2.7.7.44), phosphoglucomutase (EC: 5.4.2.2), UDP-glucose pyrophosphorylase (EC: 2.7.7.9), UDP-glucose dehydrogenase (EC: 1.1.1.22), UDP-D-glucuronate carboxylase (EC: 4.1.1.35), 1,4 β -D-xylan synthase (EC: 2.4.2.24), and cellulose synthase (EC: 2.4.1.1) which is cloned into a transformation binary vector and introduced into bacterium *Agrobacterium tumefaciens*, wherein the cassette is for expression in *Eucalyptus* cells.

2-3. (Canceled).

4. (Currently Amended) ~~CASSETTE~~, The cassette according to claim 1, characterized by the fact that the said ~~wherein the enzymes~~ enzyme is ~~is~~ is ~~[[are]]~~ involved in the biosynthesis of hemicelluloses, cellulose and/or uronic acids.

5. (Currently Amended) ~~CASSETTE~~, The cassette according to claim 4, characterized by the fact that wherein the hemicelluloses are xylans.

6. (Currently Amended) ~~CASSETTE~~, The cassette according to claim 4, characterized by the fact that ~~an~~ wherein the uronic acid is glucuronic acid.

7. (Currently Amended) ~~USE OF ONE OR MORE GENE EXPRESSION CASSETTES~~, characterized by the fact that it is for the overexpression or repression of the genes described in claim 1 A method for overexpression or repression of the genes according

to claim 1, comprising the step of introducing one or more gene cassettes into a *Eucalyptus* plant genome.

8. (Currently Amended) ~~METHOD FOR GENETIC TRANSFORMATION IN PLANT~~

~~CELLS, characterized by the fact of introducing one or more cassettes, according to one claim 1, into the plant genome~~ A method for genetic transformation in *Eucalyptus* plant cells comprising the step of introducing at least one cassette according to any of claims 1, 4, 5 or 6 into the plant genome via *Agrobacterium tumefaciens*.

9-10. (Canceled).

11. (Currently Amended) ~~METHOD, according to claim 8, characterized by the fact of~~
The method of claim 8, further comprising the step of changing the metabolic pathway for the biosynthesis of hemicelluloses, cellulose and/or uronic acids.

12. (Currently Amended) ~~METHOD, according to claim 8, characterized by the fact that~~
The method of claim 8, wherein the said plant cell is a cell *Eucalyptus* plant cells are from any part of the plant, such as the root, stem, fruit, leaf, seed, or flower.

13. (Currently Amended) ~~METHOD TO OBTAIN GENETICALLY MODIFIED PLANT, characterized by the fact that comprises the following stages~~ A method for obtaining a genetically modified *Eucalyptus* plant comprising the steps of:

- a) the genetic transformation of *Eucalyptus* plant cells according to claim 8;
- b) regeneration of stage (a) the cells in step a;
- [[c)] c) expression of the DNA introduced into the cells of stage step (b) in sufficient amount to substantially change the metabolic pathway for the biosynthesis of hemicelluloses and/or cellulose and/or uronic acids; and
- d) obtention of the *Eucalyptus* modified plant.

14. (Currently Amended) ~~METHOD, according to claim 13, characterized by the fact that~~ The method of claim 13, wherein the said-modified *Eucalyptus* plant is a cell, an organ, a tissue, a seed, the entire plant, or its derived plants.

15. (Currently Amended) ~~GENETICALLY MODIFIED PLANT, characterized by the fact of containing~~ A genetically modified *Eucalyptus* plant comprising one or more expression cassettes according to claim 1, 4, 5 or 6.

16. (Currently Amended) ~~GENETICALLY MODIFIED PLANT, characterized by the fact of being originated~~ A genetically modified *Eucalyptus* plant originating from the method according to claim 13.

17-19. (Canceled).

20. (Currently Amended) ~~USE OF THE PLANT,~~ The genetically modified plant according to claim 15, characterized by the fact of being wherein the genetically modified plant is used for obtaining wood and/or cellulose.

21. (Currently Amended) ~~DERIVED PLANTS~~ Derived *Eucalyptus* plants, characterized by the fact of being originated originating from the genetically modified *Eucalyptus* plant[[,]] according to claim 15, wherein said derived plant comprises the cassette.

22. (Currently Amended) ~~GENETICALLY MODIFIED SEED,~~ A genetically modified ~~seed~~ characterized by the fact of comprising one or more expression cassettes according to any one of claims 1, 4, 5 or 6.

23. (Currently Amended) A genetically modified seed ~~GENETICALLY MODIFIED SEED,~~ wherein the seed is modified by introducing one or more cassettes according to any one of claims 1, 4, 5 or 6 into the genome, ~~with the one or more expression cassettes comprised according to claim 1.~~

24. (Currently Amended) ~~GENETICALLY MODIFIED SEED~~, A genetically modified seed obtained from the method of claim 13, characterized by the fact of presenting wherein the seed presents a change in the biosynthesis of cellulose, hemicelluloses and/or uronic acids.

25. (Currently Amended) ~~USE OF THE GENETICALLY MODIFIED SEED~~, according to claim 22, ~~characterized by the fact of being used to generate plants~~ The genetically modified seed of claim 22, wherein the genetically modified seed is used to generate genetically modified *Eucalyptus* plants.

26-33. (Canceled).

34. (Currently Amended) ~~METHOD FOR MODULATING THE POLYPEPTIDES LEVEL IN PLANTS~~ A method of modulating polypeptide level in *Eucalyptus* plants, wherein, the said polypeptides being are involved in the biosynthesis of hemicelluloses, cellulose and/or uronic acids, characterized by the fact of comprising the following stages the method comprising the steps of:

- a) ~~introduction of~~ introducing one or more gene expression cassettes according to claim 1 into the *Eucalyptus* plant cell ~~according to claim 1~~;
- b) ~~regeneration of~~ regenerating the *Eucalyptus* plant cell;
- c) ~~induction of~~ inducing the expression of the said polypeptides during a sufficient period to modulate the level of biosynthesis of hemicelluloses, cellulose and/or uronic acids in the said *Eucalyptus* plants.

35. (New) The cassette according to claim 1, wherein the cassette is for expression in *Eucalyptus grandis* cells.

36. (New) A genetically modified seed comprising one or more expression cassettes according to claim 35.

37. (New) A genetically modified seed, wherein the seed is modified by introducing one or more cassettes according to claim 35, into the genome.

38. (New) A method for obtaining a genetically modified *Eucalyptus* plant comprising the steps of :

- a) the genetic transformation of *Eucalyptus* plant cells according to claims any one of claims 11 or 12;
- b) regeneration of the cells in step a;
- c) expression of the DNA introduced into the cells of step (b) in sufficient amount to substantially change the metabolic pathway for the biosynthesis of hemicelluloses and/or cellulose and/or uronic acids; and
- d) obtention of the *Eucalyptus* modified plant.

39. (New) The genetically modified *Eucalyptus* plant according to claim 16, wherein the genetically modified *Eucalyptus* plant is used for obtaining wood and/or cellulose.

40. (New) Derived *Eucalyptus* plants originating from the genetically modified *Eucalyptus* plant according to claim 16, wherein said derived plant comprises the cassette.